

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/11093

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B66B5/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B66B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | US 5 058 710 A (IWASA MASAO) 22 October 1991 (1991-10-22) column 3, line 1 - line 46; figure 1 | 1-10 |
| X | US 4 316 097 A (REYNOLDS WILLIAM R) 16 February 1982 (1982-02-16) column 2, line 56 - column 3, line 66; figure 1 | 1-10 |
| X | US 6 196 355 B1 (SCHROEDER-BRUMLOOP HELMUT ET AL) 6 March 2001 (2001-03-06) cited in the application abstract; figure 1 | 1,4-10 |
| X | US 4 376 471 A (UCHINO HIDEO ET AL) 15 March 1983 (1983-03-15) cited in the application abstract; figure 2 | 1,4-10 |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

16 June 2004

Date of mailing of the international search report

24/06/2004

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| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|---|--|
| US 5058710 | A | 22-10-1991 | NONE | |
| US 4316097 | A | 16-02-1982 | US 4382221 A US 4356543 A | 03-05-1983 26-10-1982 |
| US 6196355 | B1 | 06-03-2001 | BR 0009351 A CN 1351571 T DE 60004501 D1 DE 60004501 T2 EP 1165424 A1 EP 1369372 A1 ES 2204558 T3 JP 2002540043 T PT 1165424 T TW 458941 B WO 0058195 A1 US 6269910 B1 | 29-01-2002 29-05-2002 18-09-2003 25-03-2004 02-01-2002 10-12-2003 01-05-2004 26-11-2002 31-12-2003 11-10-2001 05-10-2000 07-08-2001 |
| US 4376471 | A | 15-03-1983 | JP 1367191 C JP 56103077 A JP 61031710 B GB 2068663 A , B IT 1135112 B MX 150152 A SG 21185 G | 26-02-1987 17-08-1981 22-07-1986 12-08-1981 20-08-1986 26-03-1984 13-09-1985 |

PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

REC'D 01 FEB 2006

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|---|--|--|
| Applicant's or agent's file reference K59 269/8 | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) | |
| International application No. PCT/EP2003/011093 | International filing date (day/month/year) 07.10.2003 | Priority date (day/month/year) 07.10.2003 |
| International Patent Classification (IPC) or both national classification and IPC B66B5/02 | | |
| Applicant OTIS ELEVATOR COMPANY | | |
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 2 sheets.</p> | | |
| <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none">I <input checked="" type="checkbox"/> Basis of the opinionII <input type="checkbox"/> PriorityIII <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicabilityIV <input type="checkbox"/> Lack of unity of inventionV <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statementVI <input type="checkbox"/> Certain documents citedVII <input type="checkbox"/> Certain defects in the international applicationVIII <input type="checkbox"/> Certain observations on the international application | | |
| Date of submission of the demand 18.04.2005 | Date of completion of this report 30.01.2006 | |
| Name and mailing address of the International preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 | Authorized Officer Nelis, Y Telephone No. +31 70 340-4583  | |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP2003/011093

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-12 as originally filed

Claims, Numbers

1-10 filed with telefax on 25.01.2006

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP2003/011093**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | |
| | No: Claims | 1-10 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 1-10 |
| Industrial applicability (IA) | Yes: Claims | 1-10 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP2003/011093

Reference is made to the following documents:

- D1: US-A-5 058 710 (IWASA MASAO) 22 October 1991 (1991-10-22)
- D2: US-5821476 (Harri Hakala) 13 October 1998
- D3: US-A-4 376 471 (UCHINO HIDEO ET AL) 15 March 1983 (1983-03-15)

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1) Preliminary remark:

a) In the description of the application the elevator rescue system is described as a system that works in situations where, for example a power failure occurs, a defect of the elevator itself occurs or a defect in the elevator safety chain.

As a consequence, the working field of the elevator rescue system is explained.

b) The description also points out very correctly (page 4) that normally the emergency brake and the drive motor are coupled together in a way which allows energizing of the drive motor only if the brake is energized.

- 2) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D1 discloses in the wording of claim 1 (the references in parentheses applying to this document): elevator comprising a car, a counterweight, a hoisting rope for suspending the car and the counterweight, a drive motor (30), a motor drive unit (28) for supplying the power to the drive motor (30), and a brake for stopping the movement of the car in an emergency situation (no elevator is allowed to work without this safety feature and all elevator drive units are provided with a brake that stops the movement of the car in an emergency situation), the elevator further comprising an elevator rescue system (see point 1a above), comprising an emergency power supply (32), an emergency brake switch (42a or 42b or 42c) which is arranged in a line connecting the emergency power supply (32) to the brake (indirectly via 18 and 40, see column 3, line 22-27 and point 1b above) for connecting and disconnecting the DC power of the emergency power supply (32) to the brake

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

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and an emergency drive switch (33a,33b) for connecting and disconnecting the power of the emergency power supply (32) to the drive motor (30), and whereby the elevator rescue system further comprises the motor drive unit (28) and a power line (power line from 32 to 24 and 26 via 33a and 33b) connecting the emergency power supply (32) with the motor drive unit (28) and including the emergency drive switch (33a,33b).

- 3) The subject-matter of independent claim 1, is also considered not new/inventive with regard to documents D2 and D3, see for example document D2, column 1 lines 5 and 6 , lines 16 to 23 and fig. 1.
- 4) Dependent claims 2-10 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1-D3 and the corresponding passages cited in the search report.

K 59 269/8

CLAIMS

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1. Elevator (2) comprising a car (4), a counterweight (6), a hoisting rope (8) for suspending the car (4) and the counterweight (6), a drive motor (10), a motor drive unit (26) for supplying the power to the drive motor (10), and a brake (18) for stopping the movement of the car (4) in an emergency situation, the elevator (2) further comprising an elevator rescue system (40), comprising an emergency power supply (42), an emergency brake switch (44) which is arranged in a line (60) connecting the emergency power supply (42) to the brake (18) for connecting and disconnecting the DC power of the emergency power supply (42) to the brake (18), and an emergency drive switch (46) for connecting and disconnecting the power of the emergency power supply (42) to the drive motor (10),

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characterised in that

the elevator rescue system (40) further comprises the motor drive unit (26) and a power line (74) connecting the emergency power supply (42) with the motor drive unit (26) and including the emergency drive switch (46).

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2. Elevator (2) according to claim 1, wherein the emergency power supply (42) provides at least two different output voltages, wherein the brake (18) is connected via the emergency brake switch (44) to the lower voltage output (54) and wherein the higher voltage output (56) is connected to the motor drive unit (26).

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3. Elevator (2) according to claim 2, wherein the emergency power supply (42) comprises a storage battery (48) and a voltage booster (50) for increasing the output voltage of the battery (48).

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4. Elevator (2) according to any of claims 1 to 3, wherein the brake (18) and the motor drive unit (26) are coupled with each other in a way which allows energizing of the drive motor (10) only if the brake (18) is energized.

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5. Elevator (2) according to any of claims 1 to 4, wherein the brake (18) and the motor drive unit (26) are coupled with each other in a way which allows energizing of the brake (26) only if the motor drive unit (18) is energized.
- 5 6. Elevator (2) according to any of claims 1 to 5, further comprising a main power switch (86) for disconnecting main power supply to the elevator (2), wherein the emergency brake and/or the emergency drive switches (44; 46) are coupled with the main power switch (86) in a way which allows energizing of the brake (18) and/or the drive motor (10), respectively, only if the
10 main power supply is disconnected.
7. Elevator (2) according to any of claims 1 to 6, further comprising a safety chain which is connected with a safety chain input (80) of the motor drive unit (26), wherein the emergency power supply (42) comprises a safety chain
15 voltage output (58) which provides a safety chain voltage to the safety chain input (80) of the motor drive unit (26) via the emergency drive switch (46).
8. Elevator (2) according to any of claims 1 to 7, wherein the motor drive unit (26) further includes a control input (84) which is connected via the emergency drive switch (46) to a voltage output (54) of the emergency power
20 supply (42), wherein the motor drive unit (26) is designed to provide to the drive motor (16) a power supply according an emergency rescue mode if a pre-determined voltage is applied to its control input (84).
9. Elevator (2) according to any of claims 1 to 8, further comprising a door zone
25 indicating device (64), wherein the door zone indicating device (64) is connected to the elevator rescue system (40) for stopping the car (4) at a landing (72) once the door zone indicting device (64) has signalled that the car (4) is positioned at a landing (72).
- 30 10. Elevator (2) according to any of claims 1 to 9, further comprising a speed control unit (24) for controlling the speed of the car (4), which is connected to the brake (18).